THE SALT-GILA AQUEDUCT PROJECT AND HOHOKAM ARCHAEOLOGY

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The Salt-Gila Aqueduct Project began in 1980, one component in a long series of archaeological undertakings associated with the Bureau of Reclamation's Central Arizona Project, a massive USBR project designed to bring water to central and southern Arizona. When it ended more than 4 years later, after investigations at 65 sites ranging from very small artifact scatters to a 60 acre village, Hohokam archaeology was changed. The major studies that preceded SGA were relatively few: excavations at Los Muertos by the Hemenway Expedition in the 1880's (Haury 1945), excavations at Snaketown in the 1930's (Gladwin, et al. 1937) and again in the 1960's (Haury 1976), at Painted Rocks Reservoir in the 1960's (Wasley and Johnson 1965), and the Escalante Ruin Group in the 1970's (Doyel l974) were the most substantial. There were also a number of smaller and sometimes significant studies, but the avalanche of Hohokam data that we now experience was definitely in the future. Salt-Gila also represented the first substantial series of excavations focused on smaller villages and farmsteads rather than the largest settlements having ballcourts or, later, platform mounds.

In 1980 the transition between the pre-Classic Hohokam and the subsequent Classic Period was the subject of much speculation, but little information. A significant shift in settlement distribution was part of this transition. Therefore, most of the sites that had formed the core of our understanding of Hohokam prehistory were either largely pre-Classic, like Snaketown, or were strongly associated with the Classic Period, like the Los Muertos complex.

The period between the demise of the Phoenix Basin platform mound system of community organization in about A.D. 1350 and the arrival of the Spanish in the Southwest in 1540 was even less known. The relationship between historic cultures of the region and their prehistoric predecessors was debated with vigor, but the extreme scarcity of information insured that the debate shed more heat than light. Failing to observe the old dictum that absence of evidence does not constitute evidence for absence, archaeologists

proposed a complete or virtually complete depopulation of the region during this time.

In addition, discussions of Hohokam prehistory had been marked by an assumption of regional uniformity. The task of the archaeologist had often been seen as one of defining the "normal" way of being Hohokam. The core-periphery model further reflected this perception of a single normative Hohokam world in and around the Phoenix Basin, surrounded by areas that fell to one degree or another short of that norm. SGA made the great diversity of the Hohokam regional system apparent.

PROJECT HISTORY

SGA didn't start out to be a very large project. Everyone knew that ultimately the Central Arizona Project would generate some very large archaeological undertakings, but it was expected that these would be associated with the reservoirs rather than the aqueducts. Initial estimates of effort for SGA data recovery that were presented to the Bureau of Reclamation were very low. However, after an initial period of test excavations it was abundantly clear that SGA would be a very substantial project, and one not soon forgotten. This was a cause for some very legitimate concern on the part of the agency. Large CRM projects had had a checkered history and had received considerable public criticism (Rogge 1984). From a managerial point of view, it was considered questionable whether these efforts could justify their substantial costs. SGA was budgeted at 69.6 person-years of effort at a cost of $1,671,309.51, exclusive of cost-sharing. This was clearly a project on a scale to provoke concern.

SGA is especially memorable for me as the largest and undoubtedly the most significant project that I have personally directed, but there are many other reasons for it to be memorable. The persistance of Emil Haury's campaign to have the reservoir at Frogtown completely excavated will never fade from my memory. He called daily until he won, and he was right. We could never have understood it as well had we stopped with our initial trenching. Dick Woodbury's contributions as a peer reviewer were substantial. Three hundred people worked on the Salt Gila Project contracts, and for many this was a

significant part of their archaeological training.

The final volume of the nine-volume series of SGA reports provided an assessment of the overall impact of the project and its relationship to the original research design (Teague 1984a). It was observed there that our perspectives on the answers to our original questions had changed, but it was even more important that the questions themselves had changed significantly. Although I am certainly not an unbiased observer, it seems to me that the project did fulfill its promise and justify its cost.

ENVIRONMENT AND THE HOHOKAM

With respect to understanding specific issues in Hohokam prehistory, it is important that SGA identified no environmental change that was by itself causal in major cultural change (Miksicek 1984). This was a major research conclusion in itself, since reconstructions of Hohokam prehistory dominant at the time that the project began posited environmental causality for a variety of shifts in settlement, social organization, economy, and material culture (for example, Doyel 1980). SGA set out to test the suppositions underlying that reconstruction of prehistory, and found it wanting.

SGA made a major investment in biological studies, and attempted to integrate those studies into project research more thoroughly than earlier projects had done. Pollen, fauna, and macrobotanical data had been characteristically found in an appendix to archaeological reports, cited little if at all in the earlier pages that dealt with major archaeological conclusions. Specialists associated with SGA were active in the initial research design, and continued to play a role in the project through the stage of final conclusions. As a consequence, specialized botanical and faunal studies produced results that were very meaningful in the larger perspective of project research. Methodologically, SGA study of the environment also was marked by a new awareness of the extent to which man-made modifications affected the floral and faunal record available archaeologically (Fish 1984).

SGA made a major contribution in documenting the extent to which the Hohokam had the knowledge and the technology to adapt to the non-catastrophic kinds of environmental variability that they encountered in the Sonoran Desert. On the rivers, the residents did not depend on canal irrigation from the river alone, but supplemented this with dry farming of several kinds and with gathered and hunted resources. It was confirmed that reservoirs played a major role in making possible the sorts of substantial villages that were found on intermittent drainages. SGA represents the first definite identification and subsequent excavation of a prehistoric Hohokam reservoir. It was expected that long-term residence in such locations required a reservoir as a matter of simple survival (Teague 1982), and project research supported this conclusion. However, the project asked not only how long-term settlements survived in this setting, but why they did so. The project research design suggested that population growth exceeded the capacity of riverine resources during the Colonial Period, forcing some into undesirable environments as something of a last resort. Instead, it was found that the non-riverine villages were part of a varied economic strategy that was well-designed to cope with the Sonoran Desert. This flexibility enabled the Hohokam to have a relatively stable economy even under varying climatic conditions. This in turn gave them choices in other areas of their lives.

Another assumption as the project began was that the early Classic Period was characterized by a severe economic decline, probably precipitated by environmental problems comparable to those that had been documented for the Colorado Plateau (Doyel 1980). It also had been proposed that there was a “collapse” of the Hohokam regional system, represented by the ballcourt complex and accompanying belief system (Wilcox and Sternberg 1983). SGA was unable to investigate an early Classic Period economic decline, because we could find no evidence that either the phenomenon itself or the proposed cause existed (Teague and Crown 1984). In the early Classic Period the Hohokam in the study area experienced stable or increasing economic interaction with those elsewhere at the same time that there was increased differentiation from those areas in styles of material

culture, architecture, and ritual expression.

There was some evidence that the 12th century might have been relatively drier on the intermittent drainages (Miksicek 1984), which might have influenced the Hohokam toward a greater concentration of population on the rivers, but even this evidence was inconclusive.

SOCIAL ORGANIZATION AND ECONOMY

A major focus of SGA research was the internal organization of Hohokam communities. The SGA project confirmed that the pre-Classic Hohokam were an essentially egalitarian people with little role specialization of difference in access to trade goods. There was high mobility, particularly during the pre-Classic periods, with many individuals and families spending portions of the year in fieldhouses, returning to villages during the remainder of their annual round. Those permanent villages might be on the rivers or on productive major washes like Queen Creek and Siphon Draw. However, participation in central community activities would have required association with a village having a ballcourt, and these were not present at Queen Creek. There is consequently an assumption that the Queen Creek villages must have been associated with one or more ballcourt villages on the permanent streams. This made sense in terms of the varied economic strategy identified during the project. The villages on intermittent drainages were not isolates, equivalent to riverine villages as the hubs of separate communities, but parts of larger community networks. During the pre-Classic periods riverine and non-riverine settlements complemented one another as part of the flexible economic strategy of the Phoenix Basin Hohokam.

Shifts in the location of major settlement, abandonment or near-abandonment of some major pre-Classic settlements, and greater aggregation in well-defined communities along the major permanent streams at the time of the Sedentary-Classic Period transition had been documented for some time, beginning with the excavations at Los Muertos by the Hemenway Expedition in the 1880's (Haury 1945). However, the process of change

leading to this changed settlement structure had not been very thoroughly investigated.

SGA provided an opportunity to excavate some of the smaller new settlements on the rivers, documenting the persistence of Hohokam house-in-pit architecture into the Soho phase of the Classic Period (Shaw 1983). The evolution from houses in pits to the compound architecture of the Civano Phase was also traced on the Gila River near Florence (Sires 1983a).

Prestige goods were concentrated more heavily in mound settlements than elsewhere in the Hohokam world (Teague 1984b), but everywhere there was evidence of continued participation in religious ritual by individuals throughout the society (Teague 1984c).

RELIGION AND RITUAL

By comparing data from the SGA sites with information from earlier excavations and from ethnographically documented cultural traditions of the Southwest, evidence was found suggesting that during the Classic Period the religious institutions of the Hohokam included interlocking ritual societies similar to those found ethnographically in the Southwest. Ritual objects and their distribution suggested close parallels to the beliefs and practices of the O'odham in the *Wi'ikita* ceremony, the Zuni Bow Priesthood and *Shu'maakwe* Society, and the Hopi Patki or Water clans. These parallels helped to clarify the functioning of religious institutions among the Hohokam, and also pointed toward important connections and even migrations in late prehistory.

THE POST-CLASSIC

One of the most significant results of SGA was the discovery that the El Polvorón site, which had been identified initially as a relatively unimposing Civano Phase settlement on Queen Creek, in fact dated to the period after the decline of the platform mound system (Sires 1983b). The site gave its name to the Polvoron Phase in Phoenix Basin prehistory, and enabled project researchers to identify post-Classic occupations within

multi-component sites that had been excavated earlier, at the Escalante Ruin Group and other sites on the Salt and Gila rivers (Crown and Sires 1984).

Through El Polvorón it was possible to document the continued presence of a significant population in the Phoenix Basin after the fall of the platform mound system, a considerable advance in dealing with the issue of the continuity, or lack thereof, between pre-contact and post-contact populations in the area. It was found that the normal range of crops in cultivation earlier, including cotton, continued to be grown at El Polvorón, apparently through continued use of irrigation canals. Networks of exchange had shifted, but there was still substantial evidence of trade (Sires, 1983b; Teague 1984b). Obsidian was especially common. The presence of Hopi Yellow Ware pottery was a distinctive feature of this period, testifying to interaction with more northern areas. San Carlos Red-on-brown was also present, and there was abundant Tanque Verde Red-on-Brown from the south. It became apparent again that radical changes in life in the Phoenix Basin must be explained through some mechanism other than complete economic collapse.

IN HINDSIGHT

Looking at SGA almost eighteen years after it began, there are things we missed, or simply didn't understand. A single household at Queen Creek was isolated from the nearby village. This was the only long-term habitation found on the intermittent washes that lacked a reservoir. We suggested that floodwater farming was practiced along a nearby tributary wash; most of the explanations considered for the placement of this unusual habitation relied on environmental circumstances (Crown and Hull 1983). In retrospect, it was far more important that the house yielded quartz crystals and other paraphernalia that might have been associated with curing ritual or other activities of a spiritual specialist. In O'odham villages powerful individuals of this kind tend to live beyond the normal boundaries of the settlement. The Queen Creek house conformed very precisely to the location and material culture that would be expected of such a specialist on the basis of ethnographic comparisons. The project began with too little awareness of

the historical people of the Sonoran Desert and the ways that their lives could help to shape an understanding of prehistory, a common failing in the archaeology of the time. By the end of the project, however, SGA researchers looked at historical and contemporary residential patterns and settlement structures, religious institutions, and agricultural strategies, to better shape their understanding of the past.

The project escaped some of the dangers of the time, including a widespread tendency to focus on relatively minor technical and methodological problems at the expense of larger issues. A number of methodological issues were addressed, of course, with varying degrees of success. However, the real contributions of the project rest in understanding the development of the archaeological tradition that we know as Hohokam.

A final concern is the way in which contemporary Southwestern archaeology assimilates the results of projects like SGA. Fortunately, Reclamation supported then, as it continues to support, efforts to get information out to the profession and to the general public. The SGA contract supported project researchers presenting both individual papers and project sessions at SAA and Pecos Conference meetings. Nine volumes of technical reports were published. A project-based program provided educational curriculum enrichment for schools in the Apache Junction and Florence, Arizona, areas.

Of course this isn't always enough. Archaeological reports occasionally continue to rediscover the obsolescence of the core-periphery model of the Hohokam tradition, the residential mobility of the Hohokam people, or other conclusions reached 14 years ago by SGA researchers (for example Teague 1984d and 1984e). However, numerous citations of SGA in reports over the past 15 years testify to the continuing visibility of SGA in the Hohokam literature and to the importance tbat the project research has had for studies of the Hohokam. I feel fortunate to have been able to participate in this work. I know that Reclamation archaeologists have faced many obstacles in meshing the needs of their construction-oriented agency with archaeological research, and I will always appreciate the support that they gave to the Salt-Gila Project.

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